



COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

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January 31, 2006

Dr. Alan Lloyd, PhD., Secretary
California Environmental Protection Agency
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Dear Dr. Lloyd:

Comments on Draft Climate Action Team Report to the Governor and Legislature

The County Sanitation Districts of Los Angeles County (Sanitation Districts) appreciate the opportunity to comment on the *Draft Climate Action Team Report to the Governor and Legislature* (hereafter referred to as the "Report"). The Sanitation Districts is a combination of independent special districts serving the wastewater and solid waste needs of about 5.3 million people in Los Angeles County. Our service area covers approximately 792 square miles and encompasses 78 cities and unincorporated territories within the county. The Sanitation Districts construct, operate, and maintain facilities to collect, treat, and dispose of sewage and industrial waste and provide for the management of solid wastes including recycling, solid waste transfer, disposal, and resource recovery. In their solid waste management service role, the Sanitation Districts operate numerous facilities. These facilities comprise an integrated system of solid waste management facilities that includes three active landfills, three closed landfills, one refuse-to-energy facility (the agency participates in the management of a second refuse-to-energy facility), two transfer/processing facilities, two buy-back recycling centers, and three energy recovery facilities.

Overview

The Report identifies landfills as one of the five key industries that could potentially be regulated under a "cap and trade" program. This conclusion is reached despite the fact that the Report acknowledges that landfills may emit only 2 percent of the total greenhouse emissions (GHG) in California, a conclusion we believe has been reached in error. The Report also concludes that under this scenario up to 3 million tons CO₂ equivalent of GHG can be reduced by 2020. The Sanitation Districts strongly disagree with this conclusion, but instead believe that

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regulating the landfill industry in this manner will result in very little GHG reductions, and may in fact be counterproductive to current landfill operations. As will be detailed below, under the stringent regulations that landfills operate, landfill gas is collected at a very high extraction rate resulting in GHG escaping from the surface of the landfill that are near or at background levels. In addition to regulations, other incentive programs are in effect that help ensure captured landfill gas is utilized for energy production to its fully extent further reducing GHG by offsetting fossil fuel power production. Finally, the report should recognize that landfills provide very effective long-term sequestration of carbon which have led other international and domestic GHG programs to view landfills as de minimis or zero emitters of GHG.

All of the arguments presented above for not regulating landfills under a "cap and trade" program are based upon what we believe are technical inconsistencies in inventories and assumptions. Another important aspect to consider when regulating landfills in this manner is that landfills are "essential public services" that must operate as a matter of public health and welfare. Regulating landfills under a "cap and trade" program introduce uncertainty in a landfill's ability to provide its essential public service.

Regulation and Programs that Reduce Landfill Gas Emissions to the Maximum Extent Feasible

The landfill industry is a success story for the effective control of landfill gas that has the potential, if uncontrolled, to be a public nuisance and a significant contribution to GHG. The Sanitation Districts pioneered landfill gas control by installing the first landfill gas recovery systems in the 1970s which led to more sophisticated designs in the 1980s. These control systems were not mandated by any regulatory authority, but were in response to public nuisance concerns and recognition that landfill gas could be used as a fuel because of its high methane content. The first meaningful regulations for controlling landfill gas came with the South Coast Air Quality Management District's (SCAQMD) Rule 1150.1 in 1985. Other air quality management districts throughout the state followed the path of the SCAQMD and promulgated their landfill gas control rules. In 1988 the USEPA announced its decision to regulate landfills under the authority of the Federal Clean Air Act (FCAA). The New Source Performance Standards (NSPS) for municipal landfills was first proposed in 1991 and finalized in 1996. This regulation was so successful that it served as the basis for the landfill MACT (controls for toxic constituents) that was promulgated in 2003.

The reason to recount this history is to demonstrate how the landfill industry has been carefully regulated ever since it was first realized that landfill gas, if left uncontrolled, could have public health implications. It also demonstrates how the landfill industry has responded to the challenges presented by stringent regulations. The premise of the Report is that further regulating the industry will bring about additional reductions of methane. We believe that this conclusion is based upon faulty assumptions that will be discussed in more detail below, but more importantly a failure to recognize how a modern landfill operates. Landfill regulations have been carefully crafted to maximize gas collection to the greatest extent feasible at the

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individual sites that are regulated. The regulations have also been carefully crafted to capture the percentage of sites that bear the greatest emissions. As an example, in the preamble for the final Landfill NSPS Rule and Guideline, EPA writes (with regard to the tonnage cut-off), "*The 2.5 million Mg exemption level would exempt 90 percent of the existing landfills while only losing 15 percent of the total NMOC emission reductions.*" EPA further writes, "*This cutoff excludes those landfills who would be least able to afford the costs of a landfill gas collection and control system and are less likely to have successful energy recovery projects.*" Local regulations, such as the SCAQMD Rule 1150.1 are even more stringent than the Federal NSPS in the size of sites that are addressed, but two important regulatory philosophies are common throughout. First, is that control of landfill gas should be implemented through performance standards that ensure that gas collection is maximized without dictating how to achieve the standards. The performance standard established in federal and local regulations is a "not to exceed emission concentration" that is measured across every square inch of the surface of a landfill on a regular basis. This even more impressive when it is realized that some large landfills can span over several hundred acres in size. We believe that for landfills that are regulated in this manner, fugitive emissions escaping through the surface of the landfill are at, or near background levels.

Regulations currently in place also recognize the balance operators must make in an effective landfill gas collection system. The Federal NSPS for landfills places oxygen limits on extraction wells so that areas of the landfill will not be subject to composting which occurs when too much air is pulled into the site due to a desire to capture more methane. This requirement essentially limits the amount of vacuum that could be placed on a well system. Aside from the fire dangers of composting, excessive oxygen will inhibit an area's anaerobic activity and the breakdown of the buried waste. Therefore, we believe that regulated landfills capture all the methane that is feasible to capture. Further requirements from a "cap and trade" program can be counter productive to the careful balance that has already been developed by landfill operators.

A second regulatory philosophy is the recognition that it may not be practical or economical to extract landfill gas from smaller or older landfills. For the smaller landfills, the cost of a landfill gas control system can be prohibitive while capturing only small levels of GHG. For older landfills, the methane levels can be so low that the normal management options, such as flaring, are limited. In many situations where a low quality landfill gas needs to be collected, carbon beds are used to treat the collected gas by removing toxic constituents, however, methane, which is the most important GHG, will pass through uncollected. The only other viable method of gas management with low quality landfill gas is a device that requires auxiliary fuel. However, in addition to increased emissions of criteria pollutants, the cost of these devices is prohibitive for the smaller landfills.

In addition to the regulatory activities to collect and manage landfill gas, the USEPA had established in 1995 the Landfill Methane Outreach Program (LMOP) whose mission is to *reduce methane emissions by lowering barriers and promoting development of cost-effective and environmentally beneficial landfill gas energy (LFGE) projects.* LFGE projects are an extremely

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important element of any GHG program. In addition to utilizing a renewable fuel, energy production from landfill gas will offset CO₂ emissions from fossil-fueled energy generation. LMOP's activities have been very successful by forming partnerships with businesses and landfill operators/owners to maximize the energy potential of landfill gas while reducing GHG. In addition to LMOP's activities industry efforts to secure tax credits for LFGE projects have further encouraged the industry to move towards utilization projects.

In summary, stringent regulations to capture landfill gas coupled with outreach activities have ensured that landfills are capturing landfill gas to the maximum extent feasible and utilizing the gases potential as renewable fuel

GHG from Landfills in California

We described above the extensive regulations that require modern landfill gas collection systems and compliance with stringent performance standards. In California 85 percent of the waste in place contains active landfill gas controls. At least 76 percent of the waste in place is at landfills that are large enough to be controlled under the Federal NSPS. We were not able to obtain numbers that reveal what percentage of the landfills between the 76 and 85 percent are controlled under stringent local regulations, however, it is likely that the 85 percent of controlled sites capture most of the GHG that is practical to collect. The remaining 15 percent of the waste in place likely represent small sites where collection systems are not feasible or economical. Given the large amount of waste in place that is already under stringent regulations, it is unlikely that further regulation offered through a "cap and trade" program would result in additional GHG reductions.

Assumptions used to Produce GHG Emission Inventories

It appears that the GHG estimates used in the Report are based upon emission inventories produced with a 75 percent default assumption for gas collection efficiency, and landfill gas generation predicted by regulatory landfill gas generation models. We believe that development of a GHG inventory for landfills using these assumptions will produce inaccurate results. Landfill gas collection efficiencies for modern landfills are well in excess of 90 percent. To accurately measure gas collection, not only the gas captured should be considered, but the amount of reduction achieved through the landfill cap. Actual collection efficiency is difficult to measure; however, a high collection efficiency is evidenced by the low concentrations of emissions that are measured at the surface of landfills through the regulatory compliance programs described above. We believe this will further be borne out through the CEC Landfill Field Study program (discussed below) where the actual surface flux of landfill gas will be measured, and removal through the cover will be calculated.

With regard to landfill gas generation models, these are regulatory models that are known to overestimate landfill gas generation, especially when coupled with the use of default

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collection efficiency estimates. More accurate inventories developed through programs such as the CEC Landfill Field Study will likely demonstrate that the contribution of landfills to total GHG is much lower than the 2 percent estimate provided in the Report.

When developing the Report's control strategies only actual release of the landfill gas is considered. Under most protocols of GHG developed elsewhere, (CCX, WRI, RGGI, Kyoto) landfills are considered to be "carbon neutral." Nowhere in the Report does it recognize that landfills sequester carbon in the form of woody waste, plastics and other organic material. In fact, the 2005 CEC statewide inventory report cites landfill carbon sequestration from "lumber" alone at 3.88 MMTCO₂E, yet this is not considered when placing landfills in the category of the "largest GHG sources." In fact, we believe that the total sequestration of carbon in landfills from all the sources of disposed waste to be at a level that could classify some landfills as carbon sinks.

CEC Landfill Field Program

The CEC in conjunction with the CIWMB have recognized the lack of representative data for landfill GHG, and have proceeding with a three-year study utilizing experts in the landfill industry to conduct and provide oversight on a field study to examine the potential for GHG from landfills. The Sanitation Districts strongly supports this study and have committed to not only be part of a workgroup to provide oversight, but also allow one of our landfill sites to be part of the study program. This study will provide state-of-the-art information by which constructive decisions can be developed as to the practicality of further regulations on the landfill industry.

Landfills as an Essential Public Service

Landfills operate as an "essential public service" serving the waste management needs of defined communities. Landfills must respond to population growth and provide consistent services as a matter of public health and welfare. Regulating landfills under a "cap and trade" program introduce uncertainty in a landfill's ability to provide this consistent service. As outlined above in detail, we believe that existing landfills can provide very little if any additional methane reduction, thus forcing compliance through credit purchases. Landfills would then become hostage to credit availability and price. This was recognized in the 1990s when the SCAQMD developed its RECLAIM program which is based upon the philosophy of "cap and trade." Here, the "essential public services", landfills and public treatment works were removed because it was clear that the uncertainty of credit availability and price could jeopardize their operations, and ultimately public health and welfare.

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Recommendations on how to Proceed

The Sanitation Districts believe that landfills should not be considered as part of a "cap and trade" program. We recommend that any decisions regarding landfills be put aside until the CEC Landfill Field Program is completed. We are certain that the results of this program will verify that landfills are not large contributor to GHG in California. We also ask the Climate Action Team to consider the impacts a "cap and trade" program can have on the landfill industry's ability to provide its "essential public service."

Instead of regulation, the Sanitation Districts strongly recommend that the Report recognize the landfill industry as a partner in providing GHG credits. While we believe that little if any further emission reductions can be gained at existing landfills over and above current regulations, we hope that California will recognize the positive renewable energy contributions that landfills can make to California energy needs. GHG credits can be developed through increasing the use of LFGE projects and by developing projects that create energy while operating at higher efficiencies than are achieved by conventional technologies. The Report also outlines targets for use of biodiesel fuel to displace 1 to 4 percent of California diesel fuel. Landfill gas can be a potential feedstock for the production of biodiesel fuel as well as other alternative fuels. As a partner, the Report should outline incentive programs to encourage these activities through financial support and by reducing regulatory barriers.

The Sanitation Districts appreciate the opportunity to comment on the Report and look forward to working with you and your staff in finding workable solutions to reducing GHG.

Very truly yours,

James F. Stahl



Frank Caponi
Supervising Engineer
Technical Services Department

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